

CONTENTS

EDITORIAL	1	G. SALTON—A Policy for JACM
ACM TURING LECTURE	3	R. W. HAMMING—One Man's View of Computer Science
ARTIFICIAL INTELLIGENCE	189	JAMES R. SLAGLE AND JOHN K. DIXON—Experiments with Some Programs that Search Game Trees
	349	D. W. LOVELAND—A Simplified Format for the Model Elimination Theorem-Proving Procedure; 646, Errata
	364	ERIK J. SANDEWALL—A Planning Problem Solver Based on Look-Ahead in Stochastic Game Trees
	517	GEORGE W. ERNST—Sufficient Conditions for the Success of GPS
	534	UGO MONTANARI—Continuous Skeletons from Digitized Images
AUTOMATA THEORY	132	J. A. BRZOWSKI AND RINA COHEN—On Decompositions of Regular Events
	145	GREGORY J. CHAITIN—On the Length of Programs for Computing Finite Binary Sequences: Statistical Considerations
	160	J. HARTMANIS—On the Complexity of Undecidable Problems in Automata Theory
	168	J. E. HOPCROFT AND J. D. ULLMAN—Some Results on Tape-Bounded Turing Machines
	178	ABRAHAM WAKSMAN—A Model of Replication
	208	JERZY W. GRZYMALA-BUSSE—Automorphisms of Polyadic Automata; 646, Errata
	220	ALBERT R. MEYER—A Note on Star-Free Events
	226	B. G. REYNOLDS AND W. F. CUTLIP—Synchronization and General Repetitive Machines, with Applications to Ultimate Definite Automata
	235	PHILIP M. SPIRA—The Time Required for Group Multiplication
	432	JERZY W. GRZYMALA-BUSSE—On the Periodic Representations and the Reduceability of Periodic Automata
	442	C. L. LIU—Lattice Functions, Pair Algebras, and Finite-State Machines
COMBINATORIAL ANALYSIS	455	DENNIS M. MOYLES AND GERALD L. THOMPSON—An Algorithm for Finding a Minimum Equivalent Graph of a Digraph
FORMAL LANGUAGES	91	S. A. GREIBACH—An Infinite Hierarchy of Context-Free Languages
	107	DANIEL J. ROSENKRANTZ—Programmed Grammars and Classes of Formal Languages
	244	ZOHAR MANNA—Properties of Programs and the First-Order Predicate Calculus
	256	HERMAN A. MAURER—A Direct Proof of the Inherent Ambiguity of a Simple Context-Free Language
	261	PETER WEGNER—Translation Networks and Function Composition
	383	ALFRED V. AHO—Nested Stack Automata
	407	GREGORY J. CHAITIN—On the Simplicity and Speed of Programs for Computing Infinite Sets of Natural Numbers
	423	T. KASAMI AND K. TORII—A Syntax-Analysis Procedure for Unambiguous Context-Free Grammars

FORMAL LANGUAGES 550 J. D. ULLMAN—Halting Stack Automata

—Cont'd

GRAPH THEORY	564	NORMAN E. GIBBS—A Cycle Generation Algorithm for Finite Undirected Linear Graphs
INFORMATION RETRIEVAL	13	W. S. BROWN AND J. F. TRAUB—MERCURY: A System for the Computer-Aided Distribution of Technical Reports
	26	MANFRED KOCHEN—Automatic Question-Answering of English-Like Questions About Simple Diagrams
	264	H. P. EDMUNDSON—New Methods in Automatic Extracting
	461	I. S. REED AND REIN TURN—A Generalization of Shift-Register Sequence Generators
	569	S. P. GHOSH AND M. E. SENKO—File Organization: On the Selection of Random Access Index Points for Sequential Files
MACHINE ORGANIZATION	474	MARSHALL C. PEASE—Organization of Large Scale Fourier Processors
MATHEMATICS OF COMPUTATION	49	J. R. GUARD, F. C. OGLESBY, J. H. BENNETT, AND L. G. SETTLE—Semi-Automated Mathematics
	63	H. H. TRAUBOTH—Recursive Formulas for the Evaluation of the Convolution Integral
NUMERICAL METHODS	286	GERALD BERMAN—Lattice Approximations to the Minima of Functions of Several Variables
	295	PETER LINZ—Linear Multistep Methods for Volterra Integro-Differential Equations
	302	MARSHALL C. PEASE—Inversion of Matrices by Partitioning
	483	J. N. LYNESS—Notes on the Adaptive Simpson Quadrature Routine
	496	H. S. RAHME—A New Look at the Numerical Integration of Ordinary Differential Equations
	507	A. TAL—On Monotone Decomposable Operators
	580	GEORGHIOS LOIZOU—Nonnormality and Jordan Condition Numbers of Matrices
	585	A. ZAFARULLAH—Finite Difference Scheme for a Third Boundary Value Problem
	592	SHALHAV ZOHAR—Toeplitz Matrix Inversion: The Algorithm of W. F. Trench
OPERATING SYSTEMS	73	E. G. COFFMAN, JR.—Analysis of a Drum Input/Output Queue Under Scheduled Operation in a Paged Computer System; 646, Errata
	602	H. FRANK—Analysis and Optimization of Disk Storage Devices for Time-Sharing Systems
OPERATIONS RESEARCH	315	I. ADIRI AND B. AVI-ITZHAK—A Time-Sharing Queue with a Finite Number of Customers
	511	TAMIO SHIMIZU—A Stochastic Approximation Method for Optimization Problems
	631	IGAL ADIRI—Computer Time-Sharing Queues with Priorities
RECURSIVE FUNCTION THEORY	324	ROBERT A. DI PAOLA—The Recursive Unsolvability of the Decision Problem for the Class of Definite Formulas
	328	PAUL R. YOUNG—Toward a Theory of Enumerations
	621	ROBERT A. DI PAOLA—Random Sets in Subrecursive Hierarchies

e Un-

or the

n-Like

register

tion of

processors

Semi-

of the

Func-

tegro-

outine

linary

members

ndary

m of

Queue

; 646,

es for

Finite

miza-

cision

es